

MIA BULJAN: What did you come away from, now? What is your thinking? You've got them thinking in fractions?

ERIKA ISOMURA: Right.

MIA BULJAN: So what were you thinking you might need to do next?

ERIKA ISOMURA: I was thinking, yay, they know the fractions. They understand that we can cut up bits. I wasn't still convinced that they really saw the pattern here. This pattern is very clear but once you start moving it into fractions, I didn't think they really got the pattern. I thought they understood the math of the division problem, but not how these related to each other.

MIA BULJAN: It's really super interesting content-wise, because if I was just interpreting the division sign as a fraction bar, I don't know what the technical term is ...

ERIKA ISOMURA: Right, I call it that.

MIA BULJAN: So it would be 1,000 over 10, that's 100, and 100 over 10, that's 10, and 10 over 10 is 1. And even 1 over 10 is one-tenth. But one-tenth over 10 is not any kind of notation that they would be ... I mean, it's totally legitimate math, but it's not any notation that they would be able to interpret.

ERIKA ISOMURA: But it's not something that they'd see.

MIA BULJAN: So they have to make sense of this, which is nice that they have -- they've made sense of it, but they couldn't have gotten here through the math, basically.

ERIKA ISOMURA: Right.

MIA BULJAN: So, for your next steps, are you even thinking yet about what that math looks like, or are you still just digging in?

ERIKA ISOMURA: Still digging in. The next one, I think, is the three, I just wanted to verify that they understood the cutting-up-ness.

MIA BULJAN: So you went back to -- moving away from the ten-ness to the -- something with threes instead of one.

ERIKA ISOMURA: Right.

MIA BULJAN: Okay, nice.

ERIKA ISOMURA: This was an afternoon and basically the same thing. And we went a little further and so -- I don't remember -- I think that was a me mistake actually. I don't think that was a them mistake.

MIA BULJAN: They said 30 and you wrote 10.

ERIKA ISOMURA: Yeah.

MIA BULJAN: Nice.

ERIKA ISOMURA: I threw this one in there just to see what they would do because I was curious to see if they were seeing the denominator pattern. And we didn't discuss, when we got to the third one, this one, we didn't discuss, like, what it means in the real world. I just said, "Do you see any patterns that would let me answer this?"

MIA BULJAN: And they were able -- did you do a pair-share then?

ERIKA ISOMURA: Nope.

MIA BULJAN: Or did somebody just call it out? Was it several people?

ERIKA ISOMURA: I gave them some think time and I said call it out, and yeah, half the class called it out.

MIA BULJAN: Many did, okay. So although the patterning switches, they were able to see that it's now growing in this way.

ERIKA ISOMURA: Right.

MIA BULJAN: Interesting.

ERIKA ISOMURA: Yeah, it was good. I thought they were getting it.

MIA BULJAN: Well you know, sometimes it's like ...

ERIKA ISOMURA: There's places later on where it looks like they don't, but, at that time ...

MIA BULJAN: Sometimes decimal notation is just taught, I think, so pedestrian. Like, oh, you know, move the decimals or do this or do that. But when you think about the patterns, it's like, well this is sort of getting smaller but you really have to interpret, like, tenths is smaller than hundredths is smaller than thousandths, because otherwise this denominator's actually getting ...

ERIKA ISOMURA: Bigger.

MIA BULJAN: Bigger. And that kids, we know, have problems interpreting that as smallness when it comes to magnitude. So it's not trivial to make sense of it, you know, even as you see the patterns. That's interesting. But they were able to do that?

ERIKA ISOMURA: Yeah.

MIA BULJAN: Okay.